WHAT IS CLAIMED IS:

1. A semiconductor device comprising:

a processor;

a first memory unit accessed by the processor;

a plurality of page memory units obtained by partitioning a second memory unit which is accessible by the processor at a speed higher than a speed at which the first memory unit is accessible such that each of the page memory units has a storage capacity larger than a storage capacity of a line composing a cache memory;

a tag for adding, to each of the page memory units, tag information indicative of an address value in the first memory unit and priority information indicative of a replacement priority;

a tag comparator for comparing, upon receipt of an access request from the processor, the address value in the first memory unit with the tag information held by the tag; and

a replacement control unit for replacing respective contents of the page memory units.

2. The semiconductor device of claim 1, further comprising:

a distribution managing unit for managing the number of pages allocated to each of the page memory units for each function of an application program executed by the processor.

3. The semiconductor device of claim 1, wherein the plurality of page memory units are assigned to groups each composed of a specified number of page memory units to compose a plurality of bank memories, the semiconductor device further comprising:

a bank control unit for managing the plurality of bank memories.

4. The semiconductor device of claim 3, wherein the replacement control unit

determines, upon receipt of an access request to any of the page memory units, whether or not information on a requested address of the page memory unit is held in the tag, selects, if the address information is not held, the one of the plurality of page memory units having a small amount of information transferred between itself and the first memory unit, releases the selected page memory unit, and reads data from the requested address in the released page memory unit.

5. The semiconductor device of claim 4, wherein the replacement control unit evenly redistributes, when an application program to be executed is changed, empty memories to application programs under operation.

6. The semiconductor device of claim 5, wherein, upon receipt of a new memory reserve request, the replacement control unit selects and releases the one of the empty memories allocated to the application programs under operation which is in any of the page memory units or in any of the bank memories and has a small amount of information transferred between itself and the first memory unit.

7. The semiconductor device of claim 5, wherein the replacement control unit performs reservation and release of the page memory units in one operation cycle of the application program, does not reserve any of the empty memory during the cycle, and brings the allocated empty memory into a releasable state one cycle after.

8. The semiconductor device of claim 4, wherein the replacement control unit redistributes, when an application program to be executed is changed, empty memories to application programs under operation based on the priority information preliminarily defined and held in the tag.

9. The semiconductor device of claim 8, wherein, upon receipt of a new memory reserve request, the replacement control unit selects and releases the one of the empty memories allocated to the application programs under operation which is in any of the page

memory units or in any of the bank memories and has a small amount of information transferred between itself and the first memory unit.

10. The semiconductor device of claim 8, wherein the replacement control unit performs reservation and release of the page memory units in one operation cycle of the application program, does not reserve any of the empty memory during the cycle, and brings the allocated empty memory into a releasable state one cycle after.

11. The semiconductor device of claim 4, wherein the replacement control unit redistributes, when an application program to be executed is changed, empty memories to application programs under operation in order of increasing operation cycle.

12. The semiconductor device of claim 11, wherein, upon receipt of a new memory reserve request, the replacement control unit selects and releases the one of the empty memories allocated to the application programs under operation which is in any of the page memory units or in any of the bank memories and has a small amount of information transferred between itself and the first memory unit.

13. The semiconductor device of claim 11, wherein the replacement control unit performs reservation and release of the page memory units in one operation cycle of the application program, does not reserve any of the empty memory during the cycle, and brings the allocated empty memory into a releasable state one cycle after.

14. The semiconductor device of claim 4, wherein the replacement control unit redistributes, when an application program to be executed is changed, empty memories to application programs under operation in order of decreasing amount of transfer per unit time.

15. The semiconductor device of claim 14, wherein, upon receipt of a new memory reserve request, the replacement control unit selects and releases the one of the empty memories allocated to the application programs under operation which is in any of

the page memory units or in any of the bank memories and has a small amount of information transferred between itself and the first memory unit.

16. The semiconductor device of claim 14, wherein the replacement control unit performs reservation and release of the page memory units in one operation cycle of the application program, does not reserve any of the empty memory during the cycle, and brings the allocated empty memory into a releasable state one cycle after.

17. The semiconductor device of claim 3, wherein the replacement control unit determines, upon receipt of an access request to any of the page memory units, whether or not information on a requested address of the page memory unit is held in the tag, selects, if the address information is not held, one of the plurality of page memory units based on preliminarily specified replacement information, releases the selected page memory unit, and reads data from the requested address in the released page memory unit.

18. The semiconductor device of claim 17, wherein the replacement control unit evenly redistributes, when an application program to be executed is changed, empty memories to application programs under operation.

19. The semiconductor device of claim 18, wherein, upon receipt of a new memory reserve request, the replacement control unit selects and releases the one of the empty memories allocated to the application programs under operation which is in any of the page memory units or in any of the bank memories and has a small amount of information transferred between itself and the first memory unit.

20. The semiconductor device of claim 18, wherein the replacement control unit performs reservation and release of the page memory units in one operation cycle of the application program, does not reserve any of the empty memory during the cycle, and brings the allocated empty memory into a releasable state one cycle after.

21. The semiconductor device of claim 17, wherein the replacement control unit

redistributes, when an application program to be executed is changed, empty memories to application programs under operation based on the priority information preliminarily defined and held in the tag.

22. The semiconductor device of claim 21, wherein, upon receipt of a new memory reserve request, the replacement control unit selects and releases the one of the empty memories allocated to the application programs under operation which is in any of the page memory units or in any of the bank memories and has a small amount of information transferred between itself and the first memory unit.

23. The semiconductor device of claim 21, wherein the replacement control unit performs reservation and release of the page memory units in one operation cycle of the application program, does not reserve any of the empty memory during the cycle, and brings the allocated empty memory into a releasable state one cycle after.

24. The semiconductor device of claim 17, wherein the replacement control unit redistributes, when an application program to be executed is changed, empty memories to application programs under operation in order of increasing operation cycle.

25. The semiconductor device of claim 24, wherein, upon receipt of a new memory reserve request, the replacement control unit selects and releases the one of the empty memories allocated to the application programs under operation which is in any of the page memory units or in any of the bank memories and has a small amount of information transferred between itself and the first memory unit.

26. The semiconductor device of claim 24, wherein the replacement control unit performs reservation and release of the page memory units in one operation cycle of the application program, does not reserve any of the empty memory during the cycle, and brings the allocated empty memory into a releasable state one cycle after.

27. The semiconductor device of claim 17, wherein the replacement control unit

redistributes, when an application program to be executed is changed, empty memories to application programs under operation in order of decreasing amount of transfer per unit time.

28. The semiconductor device of claim 27, wherein, upon receipt of a new memory reserve request, the replacement control unit selects and releases the one of the empty memories allocated to the application programs under operation which is in any of the page memory units or in any of the bank memories and has a small amount of information transferred between itself and the first memory unit.

29. The semiconductor device of claim 27, wherein the replacement control unit performs reservation and release of the page memory units in one operation cycle of the application program, does not reserve any of the empty memory during the cycle, and brings the allocated empty memory into a releasable state one cycle after.

30. The semiconductor apparatus of claim 3, wherein the replacement control unit determines, upon receipt of an access request to any of the page memory units, whether or not information on a requested address of the page memory unit is held in the tag, selects, if the address information is not held, the one of the plurality of page memory units having a long access cycle, releases the selected page memory unit, and reads data from the requested address in the released page memory unit.

31. The semiconductor device of claim 30, wherein the replacement control unit evenly redistributes, when an application program to be executed is changed, empty memories to application programs under operation.

32. The semiconductor device of claim 31, wherein, upon receipt of a new memory reserve request, the replacement control unit selects and releases the one of the empty memories allocated to the application programs under operation which is in any of the page memory units or in any of the bank memories and has a small amount of

information transferred between itself and the first memory unit.

33. The semiconductor device of claim 31, wherein the replacement control unit performs reservation and release of the page memory units in one operation cycle of the application program, does not reserve any of the empty memory during the cycle, and brings the allocated empty memory into a releasable state one cycle after.

34. The semiconductor device of claim 30, wherein the replacement control unit redistributes, when an application program to be executed is changed, empty memories to application programs under operation based on the priority information preliminarily defined and held in the tag.

35. The semiconductor device of claim 34, wherein, upon receipt of a new memory reserve request, the replacement control unit selects and releases the one of the empty memories allocated to the application programs under operation which is in any of the page memory units or in any of the bank memories and has a small amount of information transferred between itself and the first memory unit.

36. The semiconductor device of claim 34, wherein the replacement control unit performs reservation and release of the page memory units in one operation cycle of the application program, does not reserve any of the empty memory during the cycle, and brings the allocated empty memory into a releasable state one cycle after.

37. The semiconductor device of claim 30, wherein the replacement control unit redistributes, when an application program to be executed is changed, empty memories to application programs under operation in order of increasing operation cycle.

38. The semiconductor device of claim 37, wherein, upon receipt of a new memory reserve request, the replacement control unit selects and releases the one of the empty memories allocated to the application programs under operation which is in any of the page memory units or in any of the bank memories and has a small amount of

information transferred between itself and the first memory unit.

39. The semiconductor device of claim 37, wherein the replacement control unit performs reservation and release of the page memory units in one operation cycle of the application program, does not reserve any of the empty memory during the cycle, and brings the allocated empty memory into a releasable state one cycle after.

40. The semiconductor device of claim 30, wherein the replacement control unit redistributes, when an application program to be executed is changed, empty memories to application programs under operation in order of decreasing amount of transfer per unit time.

41. The semiconductor device of claim 40, wherein, upon receipt of a new memory reserve request, the replacement control unit selects and releases the one of the empty memories allocated to the application programs under operation which is in any of the page memory units or in any of the bank memories and has a small amount of information transferred between itself and the first memory unit.

42. The semiconductor device of claim 40, wherein the replacement control unit performs reservation and release of the page memory units in one operation cycle of the application program, does not reserve any of the empty memory during the cycle, and brings the allocated empty memory into a releasable state one cycle after.